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SEQUENCE LISTING

<110> Wu, Hongjiang
Crooke, Stanley T.

<120> Human RNAse III and Compositions and Uses Thereof

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Ser Phe Arg Pro Gln Asn Leu Arg Leu Leu His Pro Gln Gln Pro Pro
35 40 45

Val Gln Tyr Gln Tyr Glu Pro Pro Ser Ala Pro Ser Thr Thr Phe Ser
50 55 60

Asn Ser Pro Ala Pro Asn Phe Leu Pro Pro Arg Pro Asp Phe Val Pro
65 70 75 80

Phe Pro Pro Pro Met Pro Pro Ser Ala Gln Gly Pro Leu Pro Pro Cys
85 90 95

Pro Ile Arg Pro Pro Phe Pro Asn His Gln Met Arg His Pro Phe Pro
100 105 110

Val Pro Pro Cys Phe Pro Pro Met Pro Pro Pro Met Pro Cys Pro Asn
115 120 125

Asn Pro Pro Val Pro Gly Ala Pro Pro Gly Gln Gly Thr Phe Pro Phe
130 135 140

Met Met Pro Pro Pro Ser Met Pro His Pro Pro Pro Pro Pro Val Met
145 150 155 160

Pro Gln Gln Val Asn Tyr Gln Tyr Pro Pro Gly Tyr Ser His His Asn
165 170 175

Phe Pro Pro Pro Ser Phe Asn Ser Phe Gln Asn Asn Pro Ser Ser Phe
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Leu Pro Ser Ala Asn Asn Ser Ser Ser Pro His Phe Arg His Leu Pro
195 200 205

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Pro Tyr Pro Leu Pro Lys Ala Pro Ser Glu Arg Arg Ser Pro Glu Arg
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Leu Lys His Tyr Asp Asp His Arg His Arg Asp His Ser His Gly Arg
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Gly Glu Arg His Arg Ser Leu Asp Arg Arg Glu Arg Gly Arg Ser Pro
                245                 250                 255

Asp Arg Arg Arg Gln Asp Ser Arg Tyr Arg Ser Asp Tyr Asp Arg Gly
            260                 265                 270

Arg Thr Pro Ser Arg His Arg Ser Tyr Glu Arg Ser Arg Glu Arg Glu
        275                 280                 285

Arg Glu Arg His Arg His Arg Asp Asn Arg Arg Ser Pro Ser Leu Glu
    290                 295                 300

Arg Ser Tyr Lys Lys Glu Tyr Lys Arg Ser Gly Arg Ser Tyr Gly Leu
305                 310                 315                 320

Ser Val Val Pro Glu Pro Ala Gly Cys Thr Pro Glu Leu Pro Gly Glu
                325                 330                 335

Ile Ile Lys Asn Thr Asp Ser Trp Ala Pro Pro Leu Glu Ile Val Asn
            340                 345                 350

His Arg Ser Pro Ser Arg Glu Lys Lys Arg Ala Arg Trp Glu Glu Glu
        355                 360                 365

Lys Asp Arg Trp Ser Asp Asn Gln Ser Ser Gly Lys Asp Lys Asn Tyr
    370                 375                 380

Thr Ser Ile Lys Glu Lys Glu Pro Glu Glu Thr Met Pro Asp Lys Asn
385                 390                 395                 400

Glu Glu Glu Glu Glu Glu Leu Leu Lys Pro Val Trp Ile Arg Cys Thr
                405                 410                 415

His Ser Glu Asn Tyr Tyr Ser Ser Asp Pro Met Asp Gln Val Gly Asp
            420                 425                 430

Ser Thr Val Val Gly Thr Ser Arg Leu Arg Asp Leu Tyr Asp Lys Phe
        435                 440                 445

Glu Glu Glu Leu Gly Ser Arg Gln Glu Lys Ala Lys Ala Ala Arg Pro
    450                 455                 460

Pro Trp Glu Pro Pro Lys Thr Lys Leu Asp Glu Asp Leu Glu Ser Ser
465                 470                 475                 480

Ser Glu Ser Glu Cys Glu Ser Asp Glu Asp Ser Thr Cys Ser Ser Ser
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Ser Asp Ser Glu Val Phe Asp Val Ile Ala Glu Ile Lys Arg Lys Lys
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Ala His Pro Asp Arg Leu His Asp Glu Leu Trp Tyr Asn Asp Pro Gly
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Gln Met Asn Asp Gly Pro Leu Cys Lys Cys Ser Ala Lys Ala Arg Arg
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Thr Gly Ile Arg His Ser Ile Tyr Pro Gly Glu Glu Ala Ile Lys Pro
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Cys Arg Pro Met Thr Asn Asn Ala Gly Arg Leu Phe His Tyr Arg Ile
                565                 570                 575

Thr Val Ser Pro Pro Thr Asn Phe Leu Thr Asp Arg Pro Thr Val Ile
            580                 585                 590

Glu Tyr Asp Asp His Glu Tyr Ile Phe Glu Gly Phe Ser Met Phe Ala
        595                 600                 605

His Ala Pro Leu Thr Asn Ile Pro Leu Cys Lys Val Ile Arg Phe Asn
    610                 615                 620

Ile Asp Tyr Thr Ile His Phe Ile Glu Glu Met Met Pro Glu Asn Phe
625                 630                 635                 640

Cys Val Lys Gly Leu Glu Leu Phe Ser Leu Phe Leu Phe Arg Asp Ile
                645                 650                 655

Leu Glu Leu Tyr Asp Trp Asn Leu Lys Gly Pro Leu Phe Glu Asp Ser
            660                 665                 670

Pro Pro Cys Cys Pro Arg Phe His Phe Met Pro Arg Phe Val Arg Phe
        675                 680                 685

Leu Pro Asp Gly Gly Lys Glu Val Leu Ser Met His Gln Ile Leu Leu
    690                 695                 700

Tyr Leu Leu Arg Cys Ser Lys Ala Leu Val Pro Glu Glu Glu Ile Ala
705                 710                 715                 720

Asn Met Leu Gln Trp Glu Glu Leu Glu Trp Gln Lys Tyr Ala Glu Glu
                725                 730                 735

Cys Lys Gly Met Ile Val Thr Asn Pro Gly Thr Lys Pro Ser Ser Val
            740                 745                 750

Arg Ile Asp Gln Leu Asp Arg Glu Gln Phe Asn Pro Asp Val Ile Thr
        755                 760                 765

Phe Pro Ile Ile Val His Phe Gly Ile Arg Pro Ala Gln Leu Ser Tyr
    770                 775                 780

Ala Gly Asp Pro Gln Tyr Gln Lys Leu Trp Lys Ser Tyr Val Lys Leu
785                 790                 795                 800

Arg His Leu Leu Ala Asn Ser Pro Lys Val Lys Gln Thr Asp Lys Gln
                805                 810                 815

Lys Leu Ala Gln Arg Glu Glu Ala Leu Gln Lys Ile Arg Gln Lys Asn
            820                 825                 830
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Thr Met Arg Arg Glu Val Thr Val Glu Leu Ser Ser Gln Gly Phe Trp
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Lys Thr Gly Ile Arg Ser Asp Val Cys Gln His Ala Met Met Leu Pro
850 855 860

Val Leu Thr His His Ile Arg Tyr His Gln Cys Leu Met His Leu Asp
865 870 875 880

Lys Leu Ile Gly Tyr Thr Phe Gln Asp Arg Cys Leu Leu Gln Leu Ala
885 890 895

Met Thr His Pro Ser His His Leu Asn Phe Gly Met Asn Pro Asp His
900 905 910

Ala Arg Asn Ser Leu Ser Asn Cys Gly Ile Arg Gln Pro Lys Tyr Gly
915 920 925

Asp Arg Lys Val His His Met His Met Arg Lys Lys Gly Ile Asn Thr
930 935 940

Leu Ile Asn Ile Met Ser Arg Leu Gly Gln Asp Asp Pro Thr Pro Ser
945 950 955 960

Arg Ile Asn His Asn Glu Arg Leu Glu Phe Leu Gly Asp Ala Val Val
965 970 975

Glu Phe Leu Thr Ser Val His Leu Tyr Tyr Leu Phe Pro Ser Leu Glu
980 985 990

Glu Gly Gly Leu Ala Thr Tyr Arg Thr Ala Ile Val Gln Asn Gln His
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Leu Ala Met Leu Ala Lys Lys Leu Glu Leu Asp Pro Phe Met Leu Tyr
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Ala His Gly Pro Asp Leu Cys Arg Glu Ser Asp Leu Arg His Ala Met
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Ala Asn Cys Phe Glu Ala Leu Ile Gly Ala Val Tyr Leu Glu Gly Ser
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Leu Glu Glu Ala Lys Gln Leu Phe Gly Arg Leu Leu Phe Asn Asp Pro
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Asp Leu Arg Glu Val Trp Leu Asn Tyr Pro Leu His Pro Leu Gln Leu
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Gln Glu Pro Asn Thr Asp Arg Gln Leu Ile Glu Thr Ser Pro Val Leu
1090 1095 1100

Gln Lys Leu Thr Glu Phe Glu Glu Ala Ile Gly Val Ile Phe Thr His
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Val Arg Leu Leu Ala Arg Ala Phe Thr Leu Arg Thr Val Gly Phe Asn
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His Leu Thr Leu Gly His Asn Gln Arg Met Glu Phe Leu Gly Asp Ser
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Ile Met Gln Leu Val Ala Thr Glu Tyr Leu Phe Ile His Phe Pro Asp
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His His Glu Gly His Leu Thr Leu Leu Arg Ser Ser Leu Val Asn Asn
    1170                1175                1180

Arg Thr Gln Ala Lys Val Ala Glu Glu Leu Gly Met Gln Glu Tyr Ala
1185                1190                1195                1200

Ile Thr Asn Asp Lys Thr Lys Arg Pro Val Gly Leu Arg Thr Lys Thr
                1205                1210                1215

Leu Ala Asp Leu Leu Glu Ser Phe Ile Ala Ala Leu Tyr Thr Asp Lys
            1220                1225                1230

Asp Leu Glu Tyr Val His Thr Phe Met Asn Val Cys Phe Phe Pro Arg
        1235                1240                1245

Leu Lys Glu Phe Ile Leu Asn Gln Asp Trp Asn Asp Pro Lys Ser Gln
    1250                1255                1260

Leu Gln Gln Cys Cys Leu Thr Leu Arg Thr Glu Gly Lys Glu Pro Asp
1265                1270                1275                1280

Ile Pro Leu Tyr Lys Thr Leu Gln Thr Val Gly Pro Ser His Ala Arg
                1285                1290                1295

Thr Tyr Thr Val Ala Val Tyr Phe Lys Gly Glu Arg Ile Gly Cys Gly
            1300                1305                1310

Lys Gly Pro Ser Ile Gln Gln Ala Glu Met Gly Ala Ala Met Asp Ala
        1315                1320                1325

Leu Glu Lys Tyr Asn Phe Pro Gln Met Ala His Gln Lys Arg Phe Ile
    1330                1335                1340

Gly Arg Lys Tyr Arg Gln Glu Leu Lys Glu Met Arg Trp Glu Arg Glu
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Ile Val Ser His His Leu Tyr Phe Met Leu Thr His His Phe Glu Gly
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Gly Leu Ala Thr Tyr Arg Thr Ala Leu Val Gln Asn Arg Asn Leu Ala
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Thr Leu Ala Lys Asn Cys Arg Ile Asp Glu Met Leu Gln Tyr Ser His
65                  70                  75                  80

Gly Ala Asp Leu Ile Asn Val Ala Glu Phe Lys His Ala Leu Ala Asn
                85                  90                  95

Ala Phe Glu Ala Val Met Ala Ala Ile Tyr Leu Asp Gly Gly Leu Ala
            100                 105                 110

Pro Cys Asp Val Ile Phe Ser Lys Ala Met Tyr Gly His Gln Pro Val
        115                 120                 125

Leu Lys Glu Lys Trp Asp His Ile Asn Glu His Glu Leu Lys Arg Glu
    130                 135                 140

Asp Pro Gln Gly Asp Arg Asp Leu Ser Phe Ile Thr Pro Thr Leu Ser
145                 150                 155                 160

Thr Phe His Ala Leu Glu Glu Arg Leu Gly Ile Gln Phe Asn Asn Ile
                165                 170                 175

Arg Leu Leu Ala Lys Ala Phe Thr Arg Arg Asn Ile Pro Asn Asn Asp
            180                 185                 190

Leu Thr Lys Gly His Asn Gln Arg Leu Glu Trp Leu Gly Asp Ser Val
        195                 200                 205

Leu Gln Leu Ile Val Ser Asp Phe Leu Tyr Arg Arg Phe Pro Tyr His
    210                 215                 220

His Glu Gly His Met Ser Leu Leu Arg Thr Ser Leu Val Ser Asn Gln
225                 230                 235                 240

Thr Gln Ala Val Val Cys Asp Asp Leu Gly Phe Thr Glu Phe Val Ile
                245                 250                 255

Lys Ala Pro Tyr Lys Thr Pro Glu Leu Lys Leu Lys Asp Lys Ala Asp
            260                 265                 270

Leu Val Glu Ala Phe Ile Gly Ala Leu Tyr Val Asp Arg Gly Ile Glu
        275                 280                 285

His Cys Arg Ala Phe Ile Arg Ile Val Phe Cys Pro Arg Leu Lys His
    290                 295                 300

Phe Ile Glu Ser Glu Lys Trp Asn Asp Ala Lys Ser His Leu Gln Gln
305                 310                 315                 320

Trp Cys Leu Ala Met Arg Asp Pro Ser Ser Ser Glu Pro Asp Met Pro
                325                 330                 335

Glu Tyr Arg Val Leu Gly Ile Glu Gly Pro Thr Asn Asn Arg Ile Phe
            340                 345                 350
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Lys Ile Ala Val Tyr Tyr Lys Gly Lys Arg Leu Ala Ser Ala Ala Glu
        355                 360                 365

Ser Asn Val His Lys Ala Glu Leu Arg Val Ala Glu Leu Ala Leu Ala
    370                 375                 380

Asn Leu Glu Ser Met Ser Phe Ser Lys Met Lys Ala Lys Asn Asn Ser
385                 390                 395                 400

Asn Met Arg Arg Arg Leu Glu Gln Asp Thr Ser Asp
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            20                  25                  30

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        35                  40                  45

Ile Arg Lys Leu Met Phe Ala Met Lys Ala Leu Leu Glu Glu Thr Lys
    50                  55                  60

His Ser Thr Lys Asp Asp Val Asn Leu Val Ile Pro Gly Ser Thr Trp
65                  70                  75                  80

Ser His Ile Glu Gly Val Tyr Glu Met Leu Lys Ser Arg His Asp Arg
                85                  90                  95

Gln Asn Glu Pro Val Ile Glu Glu Pro Ser Ser His Pro Lys Asn Gln
            100                 105                 110

Lys Asn Gln Glu Asn Asn Glu Pro Thr Ser Glu Glu Phe Glu Glu Gly
        115                 120                 125

Glu Tyr Pro Pro Pro Leu Pro Pro Leu Arg Ser Glu Lys Leu Lys Glu
    130                 135                 140

Gln Val Phe Met His Ile Ser Arg Ala Tyr Glu Ile Tyr Pro Asn Gln
145                 150                 155                 160

Ser Asn Pro Asn Glu Leu Leu Asp Ile His Asn Glu Arg Leu Glu Phe
                165                 170                 175

Leu Gly Asp Ser Phe Phe Asn Leu Phe Thr Thr Arg Ile Ile Phe Ser
            180                 185                 190

Lys Phe Pro Gln Met Asp Glu Gly Ser Leu Ser Lys Leu Arg Ala Lys
        195                 200                 205
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Phe Val Gly Asn Glu Ser Ala Asp Lys Phe Ala Arg Leu Tyr Gly Phe
    210                 215                 220

Asp Lys Thr Leu Val Leu Ser Tyr Ser Ala Glu Lys Asp Gln Leu Arg
225                 230                 235                 240

Lys Ser Gln Lys Val Ile Ala Asp Thr Phe Glu Ala Tyr Leu Gly Ala
                245                 250                 255

Leu Ile Leu Asp Gly Gln Glu Glu Thr Ala Phe Gln Trp Val Ser Arg
            260                 265                 270

Leu Leu Gln Pro Lys Ile Ala Asn Ile Thr Val Gln Arg Pro Ile Asp
        275                 280                 285

Lys Leu Ala Lys Ser Lys Leu Phe His Lys Tyr Ser Thr Leu Gly His
    290                 295                 300

Ile Glu Tyr Arg Trp Pro Ala Cys Val Asp Gly Ala Gly Gly Ser Ala
305                 310                 315                 320

Glu Gly Tyr Val Ile Ala Cys Ile Phe Asn Gly Lys Glu Val Ala Arg
                325                 330                 335

Ala Trp Gly Ala Asn Gln Lys Asp Ala Gly Ser Arg Ala Ala Met Gln
            340                 345                 350

Ala Leu Glu Val Leu Ala Lys Asp Tyr Ser Lys Phe Ala Arg
        355                 360                 365


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            20                  25                  30

Thr Leu Leu Lys Gly Asn Leu Lys Ile Ser Asn Tyr Lys Tyr Leu Glu
        35                  40                  45

Val Ile Gln Leu Glu His Ala Val Thr Lys Leu Val Glu Ser Tyr Asn
    50                  55                  60

Lys Ile Ile Glu Leu Ser Pro Asn Leu Val Ala Tyr Asn Glu Ala Val
65                  70                  75                  80

Asn Asn Gln Asp Arg Val Pro Val Gln Ile Leu Pro Ser Leu Ser Arg
                85                  90                  95

Tyr Gln Leu Lys Leu Ala Ala Glu Leu Lys Thr Leu His Asp Leu Lys
            100                 105                 110
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Lys Asp Ala Ile Leu Thr Glu Ile Thr Asp Tyr Glu Asn Glu Phe Asp
        115                 120                 125

Thr Glu Gln Lys Gln Pro Ile Leu Gln Glu Ile Ser Lys Ala Asp Met
    130                 135                 140

Glu Lys Leu Glu Lys Leu Glu Gln Val Lys Arg Glu Lys Arg Glu Lys
145                 150                 155                 160

Ile Asp Val Asn Val Tyr Glu Asn Leu Asn Glu Lys Glu Asp Glu Glu
                165                 170                 175

Glu Asp Glu Gly Glu Asp Ser Tyr Asp Pro Thr Lys Ala Gly Asp Ile
            180                 185                 190

Val Lys Ala Thr Lys Trp Pro Pro Lys Leu Pro Glu Ile Gln Asp Leu
        195                 200                 205

Ala Ile Arg Ala Arg Val Phe Ile His Lys Ser Thr Ile Lys Asp Lys
    210                 215                 220

Val Tyr Leu Ser Gly Ser Glu Met Ile Asn Ala His Asn Glu Arg Leu
225                 230                 235                 240

Glu Phe Leu Gly Asp Ser Ile Leu Asn Ser Val Met Thr Leu Ile Ile
                245                 250                 255

Tyr Asn Lys Phe Pro Asp Tyr Ser Glu Gly Gln Leu Ser Thr Leu Arg
            260                 265                 270

Met Asn Leu Val Ser Asn Glu Gln Ile Lys Gln Trp Ser Ile Met Tyr
        275                 280                 285

Asn Phe His Glu Lys Leu Lys Thr Asn Phe Asp Leu Lys Asp Glu Asn
    290                 295                 300

Ser Asn Phe Gln Asn Gly Lys Leu Lys Leu Tyr Ala Asp Val Phe Glu
305                 310                 315                 320

Ala Tyr Ile Gly Gly Leu Met Glu Asp Asp Pro Arg Asn Asn Leu Pro
                325                 330                 335

Lys Ile Arg Lys Trp Leu Arg Lys Leu Ala Lys Pro Val Ile Glu Glu
            340                 345                 350

Ala Thr Arg Asn Gln Val Ala Leu Glu Lys Thr Asp Lys Leu Asp Met
        355                 360                 365

Asn Ala Lys Arg Gln Leu Tyr Ser Leu Ile Gly Tyr Ala Ser Leu Arg
    370                 375                 380

Leu His Tyr Val Thr Val Lys Lys Pro Thr Ala Val Asp Pro Asn Ser
385                 390                 395                 400

Ile Val Glu Cys Arg Val Gly Asp Gly Thr Val Leu Gly Thr Gly Val
                405                 410                 415

Gly Arg Asn Ile Lys Ile Ala Gly Ile Arg Ala Ala Glu Asn Ala Leu
            420                 425                 430
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Arg Asp Lys Lys Met Leu Asp Phe Tyr Ala Lys Gln Arg Ala Ala Ile
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Pro Arg Ser Glu Ser Val Leu Lys Asp Pro Ser Gln Lys Asn Lys Lys
    450                 455                 460

Arg Lys Phe Ser Asp Thr Ser
465                 470


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<213>  Escherichia coli

<400>  6

Met Asn Pro Ile Val Ile Asn Arg Leu Gln Arg Lys Leu Gly Tyr Thr
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Phe Asn His Gln Glu Leu Leu Gln Gln Ala Leu Thr His Arg Ser Ala
            20                  25                  30

Ser Ser Lys His Asn Glu Arg Leu Glu Phe Leu Gly Asp Ser Ile Leu
        35                  40                  45

Ser Tyr Val Ile Ala Asn Ala Leu Tyr His Arg Phe Pro Arg Val Asp
    50                  55                  60

Glu Gly Asp Met Ser Arg Met Arg Ala Thr Leu Val Arg Gly Asn Thr
65                  70                  75                  80

Leu Ala Glu Leu Ala Arg Glu Phe Glu Leu Gly Glu Cys Leu Arg Leu
                85                  90                  95

Gly Pro Gly Glu Leu Lys Ser Gly Gly Phe Arg Arg Glu Ser Ile Leu
            100                 105                 110

Ala Asp Thr Val Glu Ala Leu Ile Gly Gly Val Phe Leu Asp Ser Asp
        115                 120                 125

Ile Gln Thr Val Glu Lys Leu Ile Leu Asn Trp Tyr Gln Thr Arg Leu
    130                 135                 140

Asp Glu Ile Ser Pro Gly Asp Lys Gln Lys Asp Pro Lys Thr Arg Leu
145                 150                 155                 160

Gln Glu Tyr Leu Gln Gly Arg His Leu Pro Leu Pro Thr Tyr Leu Val
                165                 170                 175

Val Gln Val Arg Gly Glu Ala His Asp Gln Glu Phe Thr Ile His Cys
            180                 185                 190

Gln Val Ser Gly Leu Ser Glu Pro Val Val Gly Thr Gly Ser Ser Arg
        195                 200                 205

Arg Lys Ala Glu Gln Ala Ala Ala Glu Gln Ala Leu Lys Lys Leu Glu
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Leu Glu
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cggatcatta aagagcaagc 20

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gctcccattt ccgcttgctg 20

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atgctctctt tcccacctca 20

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Cys Arg Ser Asp Tyr Asp Arg Gly Arg Thr Pro Ser Arg His Arg Ser
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Tyr Glu Arg Ser
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<210> 36
<211> 20
<212> PRT
<213> Homo sapiens

<400> 36

Cys Arg Trp Glu Arg Glu His Gln Glu Arg Glu Pro Asp Glu Thr Glu
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Asp Ile Lys Lys
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